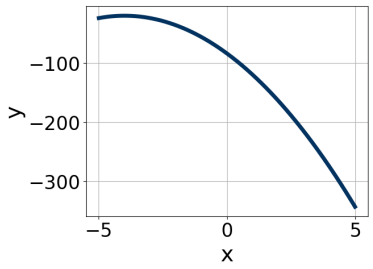
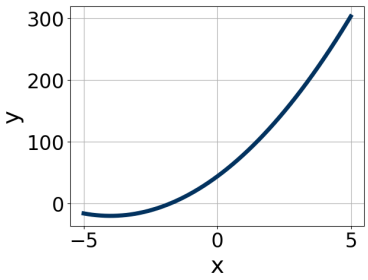
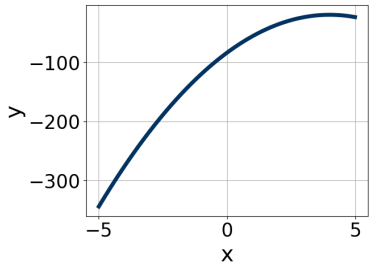
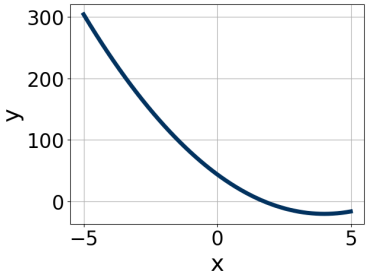
1. Graph the equation below.

$$f(x) = -(x+4)^2 - 20$$

A. 

C. 

B. 

D. 

E. None of the above.

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2. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$14x^2 + 15x - 6 = 0$$

A. $x_1 \in [-1, -0.1]$ and $x_2 \in [0.68, 1.66]$

B. $x_1 \in [-21, -17.8]$ and $x_2 \in [3.87, 5.42]$

C. $x_1 \in [-3.1, -0.7]$ and $x_2 \in [0.2, 0.53]$

D. $x_1 \in [-24.9, -22.7]$ and $x_2 \in [22.4, 24.39]$

E. There are no Real solutions.

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3. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [0.76, 1.62]$, $b \in [-31, -28]$, $c \in [0.3, 1.7]$, and $d \in [-32, -28]$

B. $a \in [1.55, 2.31]$, $b \in [-14, -3]$, $c \in [17.2, 20.8]$, and $d \in [-10, -2]$

C. $a \in [4.65, 6.7]$, $b \in [-14, -3]$, $c \in [5.4, 8.8]$, and $d \in [-10, -2]$

D. $a \in [16.99, 19.36]$, $b \in [-14, -3]$, $c \in [1.1, 4.2]$, and $d \in [-10, -2]$

E. None of the above.

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4. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 + 7x - 36 = 0$$

A. $x_1 \in [-7.9, -2.9]$ and $x_2 \in [0.34, 0.74]$

B. $x_1 \in [-2.9, -1.3]$ and $x_2 \in [0.97, 1.74]$

C. $x_1 \in [-10.2, -8.1]$ and $x_2 \in [-0.01, 0.28]$

D. $x_1 \in [-1, -0.7]$ and $x_2 \in [2.3, 3.12]$

E. $x_1 \in [-30.5, -24.2]$ and $x_2 \in [19.66, 20.07]$

---

5. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-14x^2 + 7x + 6 = 0$$

A. $x_1 \in [-0.88, -0.16]$ and $x_2 \in [0.78, 1]$

B. $x_1 \in [-19.54, -19.21]$ and $x_2 \in [19.4, 20.44]$

C. $x_1 \in [-0.96, -0.86]$ and $x_2 \in [0.33, 0.55]$

D. $x_1 \in [-13.63, -13.3]$ and $x_2 \in [6, 7.07]$

E. There are no Real solutions.

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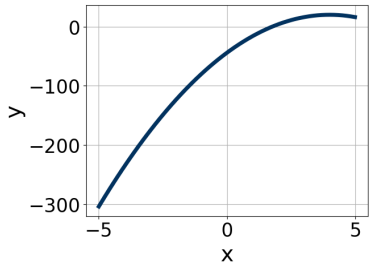
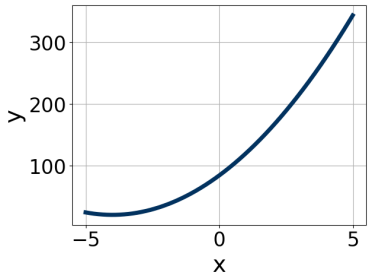
6. Graph the equation below.

$$f(x) = -(x-4)^2 + 20$$

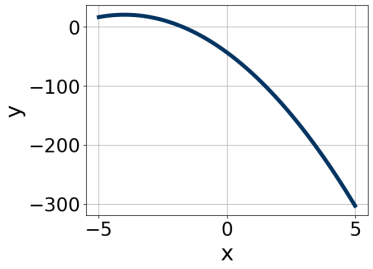
A.



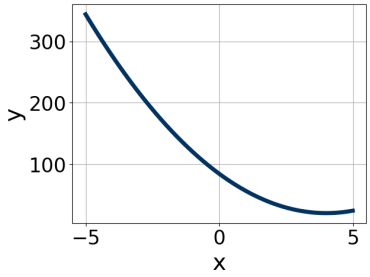
C.



B.



D.



E. None of the above.

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7. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$10x^2 - 57x + 54 = 0$$

A. $x_1 \in [-0.02, 0.46]$ and $x_2 \in [13.49, 13.9]$

B. $x_1 \in [11.96, 12.04]$ and $x_2 \in [44.69, 45.36]$

C. $x_1 \in [1.31, 1.77]$ and $x_2 \in [3.54, 4]$

D. $x_1 \in [1.07, 1.26]$ and $x_2 \in [4.47, 5.13]$

E. $x_1 \in [0.85, 1]$ and $x_2 \in [5.67, 7.13]$

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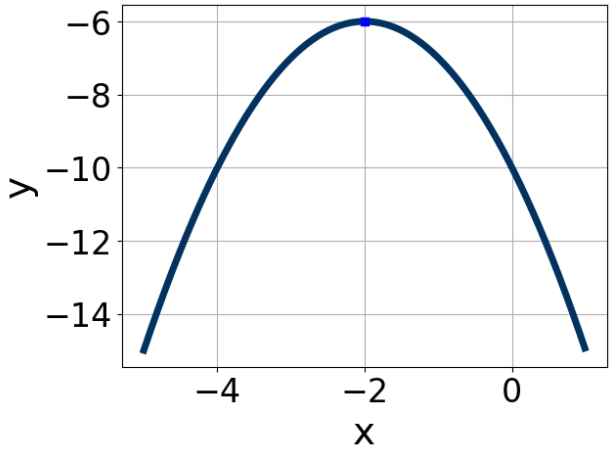
8. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1.8, 0.1]$, $b \in [3, 8]$, and $c \in [-1, 4]$

B. $a \in [-1.8, 0.1]$, $b \in [-5, -3]$, and $c \in [-13, -7]$

C. $a \in [-0.7, 1.6]$, $b \in [3, 8]$, and $c \in [-3, 1]$

D. $a \in [-1.8, 0.1]$, $b \in [3, 8]$, and $c \in [-13, -7]$

E. $a \in [-0.7, 1.6]$, $b \in [-5, -3]$, and $c \in [-3, 1]$

---

9. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$54x^2 + 15x - 25$$

A. $a \in [7.5, 11.6]$, $b \in [-5, 2]$, $c \in [6, 11]$, and $d \in [-1, 15]$

B. $a \in [2.6, 4.5]$, $b \in [-5, 2]$, $c \in [13, 20]$, and $d \in [-1, 15]$

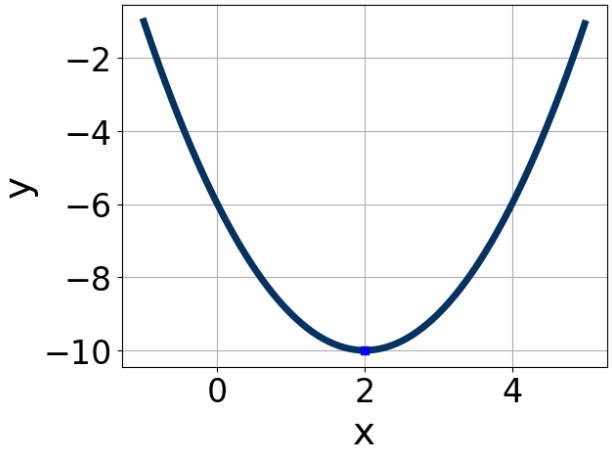
C. $a \in [14.7, 19.6]$, $b \in [-5, 2]$, $c \in [3, 5]$, and $d \in [-1, 15]$

D. $a \in [-0.9, 1.2]$, $b \in [-33, -27]$, $c \in [0, 2]$, and $d \in [44, 52]$

E. None of the above.

---

10. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1, 0]$, $b \in [-4, -2]$, and $c \in [-14, -11]$

B. $a \in [1, 3]$, $b \in [4, 5]$, and $c \in [10, 16]$

C. $a \in [1, 3]$, $b \in [-4, -2]$, and $c \in [-8, -5]$

D. $a \in [1, 3]$, $b \in [4, 5]$, and $c \in [-8, -5]$

E. $a \in [-1, 0]$, $b \in [4, 5]$, and $c \in [-14, -11]$
